



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,081	03/21/2006	Takashi Kikuchi	81844.0040	4907
26/021 7590 05/13/2008 HOGAN & HARTSON LLP. 1999 AVENUE OF THE STARS SUITE 1400 LOS ANGELES, CA 90067				
EXAMINER				
DESAL, ANISH P				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
05/13/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/541,081

**Applicant(s)**

KIKUCHI ET AL.

**Examiner**

ANISH DESAI

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's arguments in response to the Office action dated 08/06/07 have been fully considered.
2. Claims 1-20 are pending. Claim 20 is a new claim. Support for amended claims is found in the specification.
3. All of the art rejections made by the previous Examiner are maintained.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (EP 1 014 766 A2) combined with Watanabe et al. (EP 0 335 337), substantially as set forth in 08/06/07 Office Action, together with following additional observations as applied to amended claims.
6. Regarding claims 1-7 and 9-18, the art rejections of EP-766 as modified by EP-337 are set forth by the previous Examiner in 08/06/07 Office Action. Thus this Office Action addresses newly amended claims 8, 19, and 20.
7. As to claim recitations of "a thermal roll laminator including at least one pair of metal rolls bonds the metal foil onto the bonding sheet" (claims 8 and 19) and "wherein

the non-adhesive layer is obtained by applying a mixture of a precursor of non-thermoplastic polyimide and a thermoplastic polyimide or its precursor on the heat resistant film, followed by imidization", these limitations are directed to product by process claims. The product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

8. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). With regards to claims 8 and 19, the bonding sheet of Applicant's invention is bonded to the metal foil. It is noted that the bonding sheet 2 of EP-766 is attached to the metal foil 1 (see Figure 1). Thus, the structure of the one-side metal-clad laminates of Applicant and that of EP-766 is similar. As to claim 20, according to Applicant "The non-thermoplastic resin in the non-adhesive layer of the bonding sheet is not particularly limited...In particular, a most typical polyimide made of 4,4'-diaminodiphenyl ether and a pyromellitic dianhydride is

preferable" (see paragraph 0026 of US Patent Application Publication 2006/0216502A1). Moreover, Applicant discloses "The thermoplastic resin in the adhesive layer or the non-adhesive layer of the inventive bonding sheet is not particularly limited...preferably examples thereof include thermoplastic polyimides, thermoplastic polyamideimides...thermoplastic polyesterimides" (see 0023 of US Patent Application Publication 2006/0216502A1). It is noted that the outer layer 2c of EP-766 is formed of polyimide that is made of 4,4'-diaminodiphenyl ether and a pyromelitic dianhydride (see 0046 and working Example 4 in Table 7 where the third layer is formed of polyimide made of 4,4'-diaminodiphenyl ether and a pyromelitic dianhydride). Thus, the layer 2c of EP-766 is made of Applicant's preferred non-thermoplastic polyimide. The secondary reference of EP-337 discloses polyimide resins such as polyimides, polyamideimides, and polyesterimides (page 3 lines 10-15), which are same as that of Applicant's preferred thermoplastic polyimides. Additionally, it is noted that the secondary reference of EP-337 discloses that the polyimide resins may be blended with other polyimide resins. Therefore, the combination of EP-766 and EP-337 discloses a mixture of thermoplastic polyimide and non-thermoplastic polyimide. Thus, the structure of the non-adhesive layer 2c of EP-766 as modified by EP-337 is similar to that of Applicant's invention.

***Response to Arguments***

9. Applicant's arguments filed 02/06/08 have been fully considered but they are not persuasive.
10. Applicant argues that Watanabe (EP-337) does not disclose the thermal lamination of polyimide resin layers by a thermal roll laminator. The Examiner respectfully disagrees because said argument is directed to product by process claim limitation. Further, the primary reference of Takahashi (EP-766) discloses the structure resulting from the product by process claim. As stated above in Section 8, the product by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).
11. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). The bonding sheet of Applicant's invention is bonded to a metal foil. It is noted that the bonding sheet 2 of

Takahashi (EP-766) is attached to a metal foil 1 (see Figure 1). Thus, the structure of the one-side metal-clad laminates of Applicant and that of EP-766 is similar.

12. Applicant argues that there is no disclosure in either Takahashi (EP-766) or Watanabe (EP-337) of thermoplastic resin provided with the non-thermoplastic resin. It is respectfully submitted that the combination of Takahashi and Watanabe is relied upon to show the mixture of thermoplastic resin with the non-thermoplastic resin. It is noted that as non-thermoplastic resin Applicant discloses "The non-thermoplastic resin in the non-adhesive layer of the bonding sheet is not particularly limited...In particular, a most typical polyimide made of 4,4'-diaminodiphenyl ether and a pyromelitic dianhydride is preferable" (see paragraph 0026 of US Patent Application Publication 2006/0216502A1). Moreover, Applicant discloses "The thermoplastic resin in the adhesive layer or the non-adhesive layer of the inventive bonding sheet is not particularly limited...preferably examples thereof include thermoplastic polyimides, thermoplastic polyamideimides...thermoplastic polyesterimides" (see 0023 of US Patent Application Publication 2006/0216502A1). It is noted that the outer layer 2c of Takahashi (EP-766) is formed of polyimide that is made of 4,4'-diaminodiphenyl ether and a pyromelitic dianhydride (see 0046 and working Example 4 in Table 7 where the third layer is formed of polyimide made of 4,4'-diaminodiphenyl ether and a pyromelitic dianhydride). Thus, the layer 2c of Takahashi (EP-766) is made of Applicant's preferred non-thermoplastic polyimide. The secondary reference of EP-337 discloses polyimide resins such as polyimides, polyamideimides, and polyesterimides (page 3 lines 10-15), which are same as that of Applicant's preferred thermoplastic polyimides. Additionally,

it is noted that the secondary reference of Watanabe (EP-337) discloses that the polyimide resins may be blended with other polyimide resins. Further, Watanabe (EP-337) teaches that "films from the resin show good heat resistance and flexibility" (page 3 lines 9-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyimide of Watanabe (EP-337) in the layer 2c of Takahashi (EP-766), motivated by the desire to provide a polyimide film layer with good heat resistance and flexibility.

13. As to Applicant's argument regarding new claim 20, as set forth above in Section 8, this claim is directed to product by process claim limitation, and the Examiner's comments set forth above in Section 8 are equally applicable for rebuttal. Accordingly, the art rejections are maintained.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



Art Unit: 1794

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Vo can be reached on 571-272-1485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./

Examiner, Art Unit 1794

/Hai Vo/

Hai Vo

Primary Examiner, Art Unit 1794